AMENDMENTS TO THE CLAIMS

1. (currently amended) A real-time, optoelectronic (OE) alignment system, comprising:

a first OE device;

a second OE device optically coupled to said first OE device;

a capturing means for maintaining said second OE device in a fixed position, said capturing means further retaining said first OE device in optical engagement with said second OE device, and said first OE device further having a plurality of degrees of positional freedom associated therewith;

an error detection means for generating a positional error signal, whenever either of said first and second OE devices has deviated from a desired optical alignment with respect to the other; and

~~an~~ a real-time actuation means, responsive to said error detection means, said actuation means configured for automatically adjusting the position of said first OE device so as to bring said first OE device in said desired optical alignment with said second OE device so as to compensate for positional drifts of either of said first and second OE devices with respect to one another, said real-time actuation means further comprising:

a plurality of actuator mechanisms disposed within a housing, each of said plurality of actuator mechanisms capable of imparting a translating motion upon said first OE device, wherein said plurality of actuator mechanisms comprise a first actuator mechanism having a first linkage directly coupled to said first OE device, a second actuator mechanism having a second linkage directly coupled to said first actuator mechanism, and a third actuator mechanism having a third linkage directly coupled to said second actuator mechanism.

2. (currently amended) The OE alignment system of claim 1, wherein:

said second OE device is affixed to a reference plane;

said first OE device is movably disposed within ~~a~~ said housing; and

said housing is affixed with respect to said second OE device.

3. (cancelled)

4. (original) The OE alignment system of claim 2, wherein said first OE device further comprises one of:

an active device emitter; and

an emitting end of a fiber optic cable.

5. (original) The OE alignment system of claim 1, wherein said error detection means further comprises:

a beam position structure, affixed to one of said first and second OE devices, said beam position structure located so as to reflect a portion of an incident optical beam originating from the other of said first and second OE devices; and

an optical sensing device, said optical sensing device located so as to detect said reflected portion of said incident optical beam;

wherein said optical sensing device generates said positional error signal, said positional error signal having a magnitude proportional to the degree of deviation from said desired optical alignment.

6. (original) The OE alignment system of claim 5, further comprising:

a controller, said controller converting said positional error signal to correction signal, said correction signal being inputted to said actuation means.

7. (original) The OE alignment system of claim 6, further comprising:

a driver, said driver having said correction signal as an input thereto and an output for providing a controlled current to said actuation means.

8. (cancelled)

9. (cancelled)

10. (currently amended) The OE alignment system of claim 91, wherein:

said first actuator is capable of translating said first OE device along a first axis;

said second actuator is capable of translating said first OE device along a second axis which is orthogonal to said first axis; and

said third actuator is capable of translating said first OE device along a third axis which is orthogonal to both said first and second axes.

11. (original) The OE alignment system of claim 5, wherein said error detection means compares the magnitude of optical power received by said second OE device to a desired optical power level.

12. (original) The OE alignment system of claim 11, wherein said error detection means generates said positional error signal whenever said magnitude of optical power received by said second OE device is less than said desired optical power level.

13. (currently amended) A method for automatically adjusting the optical alignment of devices within an active, optoelectronic (OE) system, the method comprising:

optically coupling a first OE device to a second OE device in a desired optical alignment;

maintaining said second OE device in a fixed position while retaining said first OE device in moveable optical engagement with said second OE device, said first OE device further having a plurality of degrees of positional freedom associated therewith;

generating a positional error signal whenever either of said first and second OE devices has deviated from said desired optical alignment with respect to the other; and

responsive to said error detection means, automatically engaging a real-time actuation means to ~~adjusting~~ adjust, in real time, the position of said first OE device so as to bring said first OE device in said desired optical alignment with said second OE device to compensate for positional drifts of either of said first and second OE devices with respect to one another, said real-time actuation means further comprising:

a plurality of actuator mechanisms disposed within a housing, each of said plurality of actuator mechanisms capable of imparting a translating motion upon said first OE device, wherein said plurality of actuator mechanisms comprise a first actuator mechanism having a first linkage directly coupled to said first OE device, a second actuator mechanism having a second linkage directly coupled to said first actuator mechanism, and a third actuator mechanism having a third linkage directly coupled to said second actuator mechanism.

14. (currently amended) The method of claim 13, wherein:

said second OE device is affixed to a reference plane;

said first OE device is movably disposed within ~~a~~ said housing; and

said housing is affixed with respect to said second OE device.

15. (original) The method of claim 14, wherein the position of said first OE device is adjusted within said housing.

16. (original) The method of claim 14, wherein said first OE device further comprises one of:

an active device emitter; and

an emitting end of a fiber optic cable.

17. (original) The method of claim 13, further comprising:

affixing a beam position structure to one of said first and second OE devices, said beam position structure located so as to reflect a portion of an incident optical beam originating from the other of said first and second OE devices; and

locating an optical sensing device so as to detect said reflected portion of said incident optical beam;

wherein said optical sensing device generates said positional error signal, said positional error signal having a magnitude proportional to the degree of deviation from said desired optical alignment.

18. (original) The method of claim 17, further comprising:

converting said positional error signal to a correction signal, said correction signal being used to adjust the position of said first OE device.

19. (currently amended) The method of claim 18, further comprising:

generating a controlled current from a driver, said driver having said correction signal as an input thereto and an output coupled to ~~an~~ said real-time actuation means.

20. (cancelled)